SEQUENCE LISTING

<110> Chan, John
      Baynes, Brian
      Zhang, Shengsheng

<120> METHODS OF ENGINEERING SPATIALLY
      CONSERVED MOTIFS IN POLYPEPTIDES

<130> COTH-P01-002

<140> US 10/676,873
<141> 2003-09-30

<150> US 60/414,688
<151> 2002-09-30

<160> 4

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 474
<212> DNA
<213> Artificial Sequence

<220>
<223> Nucleotide sequence of TNF alpha chain b mutation
      b_tyr_119_asp

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gtggagctga gagataacca gctggtggtg ccatcagagg gcctgtacct catctactcc 180
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tgccagaggg agaccccaga gggggctgag gccaagccct ggtatgagcc catcgatctg 360
ggaggggtct tccagctgga gaagggtgac cgactcagcg ctgagatcaa tcggcccgac 420
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<220>
<223> Protein sequence of TNF alpha chain b mutation
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Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala Gly Val
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Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg
                20   25   30
Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu
            35   40   45

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Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe
    50              55              60
Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile
65              70              75              80
Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala
            85              90              95
Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys
        100             105             110
Pro Gln Tyr Glu Pro Ile Asp Leu Gly Gly Val Phe Gln Leu Glu Lys
        115             120             125
Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Leu Phe
    130             135             140
Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu
145             150             155
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<210> 3
<211> 474
<212> DNA
<213> Artificial Sequence

<220>
<223> Nucleotide sequence of TNF alpha chain c mutations
      c_tyr_119_his, c_tyr_59_ser

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gtggagctga gagataacca gctggtggtg ccatcagagg gcctgtacct catcagttcc 180
caggtcctct tcaagggcca aggctgcccc tccacccatg tgctcctcac ccacaccatc 240
agccgcatcg ccgtctccta ccagaccaag gtcaacctcc tctctgccat caagagcccc 300
tgccagaggg agaccccaga gggggctgag gccaagccct ggtatgagcc catccatctg 360
ggagggggtct tccagctgga aagggtgac cgactcagcg ctgagatcaa tcggcccgac 420
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<212> PRT
<213> Artificial Sequence

<220>
<223> Protein sequence of TNF alpha chain c mutations
      c_tyr_119_his, c_tyr_59_ser

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Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val
1               5               10              15
Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg
            20              25              30
Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu
        35              40              45
Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Ser Ser Gln Val Leu Phe
    50              55              60
Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile
65              70              75              80
Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala
            85              90              95
Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys
        100             105             110
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Pro Gln Tyr Glu Pro Ile His Leu Gly Gly Val Phe Gln Leu Glu Lys
    115   120   125
Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Leu Phe
    130   135   140
Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu
145   150   155